

P006-e

Screening of changes in refractometry after stroke: A retrospective cohort study case control

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Objective To compare prevalence of refractometry disorders in post-stroke patients compared to case control in hospital, using the refractometer Plusoptix®.

Material/patients and methods The measurement was made using a refractometer Plusoptix®: binocular measurement a meter away in the dark with usual patient pre-existing correction. The same examiner performed 3 measurements at 2 different times to study reproducibility. Twenty-eight patients (mean age: 59.6 years) who experienced an ischemic or haemorrhagic stroke than 3 months were included, and 28 controls without neurological history, matched on age and sex.

Results Twenty-four patients had an ischemic stroke (82.7%) and 4 patients haemorrhagic stroke. Wearing optical correction did not differ significantly. The refractometer intrajuge reproducibility was good, 0.84 average correlation coefficient for measures 2 different days. The ideal refractometry with correction is zero, and reduced in absolute value was on the right average 1.46 (DS: 1.28) for patients versus 0.95 (DS: 0.63) for case control ($P = 0.79$) and on the left 1.28 DS (0.95) versus 0.86 DS (0.77) ($P = 0.48$). In contrast, in the 18 patients with refractometry > 1.5 to baseline, only 18% of neurological patients complained of visual impairment against 50% of controls.

Discussion There are few available data on refractometry disorders prevalence after stroke, some authors report around 20 to 25% [1]. Despite non-significant results, and because of the important refractometer disorders in stroke patients, expressing few visual impairment, this study suggests the interest of a refractometer Plusoptix® testing to improve their rehabilitation and quality of life [2].

Keywords Refractometry; Refractometer; Stroke; Visual impairment; Rehabilitation

Disclosure of interest The authors have not supplied their declaration of conflict of interest.

References

- [1] Rowe F, Brand D, Jackson CA, Price A, Walker L, Harrison S, et al. Visual impairment following stroke: do stroke patients require vision assessment? *Age Ageing* 2009;38(2):188–93.
- [2] Jones SA, Shinton RA. Improving outcome in stroke patients with visual problems. *Age Ageing* 2006;35(6):560–5.

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P007-e

Effect of tendon vibration on upper limb motor recovery with subacute hemiplegia after a stroke: A case report

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Introduction A few studies have found short-term effects of tendon vibration therapy on upper limb function in chronic

hemiplegia [1,2]. We report the effect of tendon vibrations of the elbow and wrist flexor muscles on recovery of the upper limb in a recent hemiplegic patient.

Observation A 69-year-old woman was admitted to our department for right hemiplegia and aphasia after a left middle cerebral artery (MCA) stroke and a left cerebellar infarct secondary to cardiac arrhythmia. Initial NIHSS 22/44. Motor function on upper limb was limited to slight abduction and elevation of the shoulder, slight flexion of the wrist and elbow. The initial Functional Independence Measure score was 38/126. Intensive classical reeducation was started with little progress of upper limb recovery despite upper limb suspension, bimanual work and mirror therapy for 1 month. Two months after the stroke, the vibration program began. Evaluation using Fugl-Meyer assessment (FMA) for the upper limb, the Action Research Arm Test (ARAT) and the modified Tardieu Scale was performed at days 0, 7, 21, 28 and 35. The tolerance and feasibility were studied. Vibrations (80 Hz) were applied on right distal biceps brachii, flexor carpi radialis and ulnaris muscle tendons during 16 min, twice a day, 5 days a week for 2 weeks on days 7 to 21. No side effects or pain were reported. The FMA score increased 6 points the first week, 9 points during the vibration period, 9 new points the third week, and then stabilized. The ARAT score increased from 0 to 11 during the vibration period and reach 24 at D35.

Discussion Tendon vibration seemed to give a new impetus to motor recovery in this patient and leads to the elaboration of a controlled trial to assess its real effectiveness in subacute stroke.

Keywords Stroke; Upper limb; Rehabilitation; Tendon vibration

Disclosure of interest The authors have not supplied their declaration of conflict of interest.

References

- [1] Tavernese E, Paoloni M, Mangone M, et al. Segmental muscle vibration improves reaching movement in patients with chronic stroke. A randomized controlled trial. *Neurorehabilitation* 2013;32(3):591–9.
- [2] Marconi B, Filippi GM, Koch G, et al. Long-term effects on cortical excitability and motor recovery induced by repeated muscle vibration in chronic stroke patients. *Neurorehab Neural Repair* 2011;25(1):48–60.

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P008-e

Low cost objective diagnosis of learned non-use of the paretic arm after a stroke using Kinect technology

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Background Post-stroke patients tend to move their trunk forward to reach an object rather than extending their affected arm, which is detrimental to good recovery of the paretic arm. In order to avoid this maladaptive trunk compensation, an objective assessment is needed. In that context, learned non-use (LNU) of the paretic arm is the difference between what the patient is capable of doing with his paretic arm and what he actually does. LNU has been previously assessed with a costly movement analysis device (Zebris). However, the Kinect 2 (X-box) is an innovative movement sensor that costs a fraction of the price of Zebris (about 200 €). The aim of this study was to show that the results obtained by the Zebris and Kinect are comparable and to see if the Kinect is a valid alternative to Zebris.

Methods Four post-supratentorial stroke participants were asked to reach a cone placed in front of them at 80% of their